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EXAMINER	
CRUTCHFIELD, CHRISTOPHER M	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/584,652	PERROT ET AL.	
	Examiner	Art Unit	
	Christopher Crutchfield	2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 8 is objected to because of the following informalities: claim 8 should depend upon claim 7. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claims 1-5 and 7-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Jeon*, et al. (Jeon, Ho-In, 1394 Wireless Home Network, Korean Institute of Communication and Science, Journal of Information and Communication, Vol. 19, No. 5, Pages 63-78) in view of The ESTI IEEE 1394 SSCS (Author Unknown, Broadband Radio Access networks; HIPERLAN Type 2; Part 3: IEEE Service Specific Convergence Sublayer (SSCS)), European Telecommunications Standards Institute (ESTI) Technical Specification (TS) 101 493-3, Version 1.2.2, Pages 1-74, December 2001) and *Williams*, et al. (Steven Williams and Benno Ritter, 1394 Requirements of 802.11 QoS, IEEE 802.11 Working Group Submission, March 2001, Pages 1-17).

Regarding claim 1, *Jeon* discloses a method of transmitting data over a wireless link, wherein it comprises the following steps: insertion of the data into packets according to a format corresponding to a protocol adaptation layer of a second protocol to adapt a first protocol for data transmission over a wireless network, use of these packets to form a frame in accordance with a second protocol for data transmission over a wireless network, different from the first protocol and transmission over the wireless network according to the second protocol (Pages 75-77, Particularly Figs. 10 and 11). (*Jeon* discloses the use of a protocol adaptation layer [PAL] to create IEEE 1394 SDUs for transmission over an 802.11 network from received IEEE 1394 traffic [Fig. 10, "Wireless 1394 PAL"]. *Jeon* further discloses that the IEEE 1394 SDUs are then

encapsulated in an 802.11 MAC services data unit [MSDU] at the data link layer and transmitted over the wireless network [Fig. 11 – "802.11 MSDU" and "IEEE 1394 SDU"].)

Jeon fails to disclose the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer of the Hiperlan/2 protocol such that the method comprises a step for insertion of the data into packets according to a format corresponding to at least certain layers of a first protocol for data transmission over a wireless network. In the same field of endeavor, The ESTI IEEE 1394 SSCS discloses the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer of the Hiperlan/2 protocol such that the method comprises a step for insertion of the data into packets according to a format corresponding to at least certain layers of a first protocol for data transmission over a wireless network (Pages 11-14). (The system of The ESTI IEEE 1394 SSCS discloses the use of the IEEE 1394 SSCS to convert IEEE 1394 packets to IEEE1394 SSCS PDUs for encapsulation by the Hiperlan/2 Data Link Layer and transmission on the wireless link [Pages 11-14 and 23-24, Particularly Page 11, Fig. 1]).

Therefore, since The ESTI IEEE 1394 SSCS suggests the use of the Hiperlan 2 service specific convergence sublayer for adapting IEEE 1394 traffic to a form that may be encapsulated in and transmitted by the Hiperlan 2 data link layer and *Jeon* suggests the use of a protocol adaptation layer/convergence layer for adapting IEEE 1394 traffic to a format that can be encapsulated by the 802.11 data link layer, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the service specific convergence layer of The ESTI IEEE 1394 SSCS in to the teachings of *Jeon* by replacing the 802.11 protocol adaptation layer with the IEEE 1394 SSCS, as taught by The ESTI IEEE 1394 SSCS, and encapsulating the IEEE 1394 SSCS packets using the appropriate data link layer, as taught by

The ESTI IEEE 1394 SSCS and *Jeon*. The motive to combine is to allow the use of a common conversion layer for Hiperlan 2 and IEEE 802.11 to reduce system complexity, as would have been apparent to a person of ordinary skill in the art at the time of the invention, and as is also suggested by *Williams* (See *Williams*, Page 4). (The system of *Williams* suggests the use of a common convergence/adaptation layer for bridging all wireless protocols [Page 4 – "There are calls to create a common approach to bridging across any wireless medium - Hiperlan/2, MMAC"].)

In the alternative, the motive to combine could also be supplied by KSR Int'l Co. v. Teleflex Inc., as *Jeon* discloses the present invention except for the use of the Hiperlan 2 service specific convergence sublayer (as opposed to the 802.11 protocol adaptation layer of *Jeon*) for adapting IEEE 1394 packets. KSR Int'l Co. v. Teleflex Inc. 127 S.Ct. 1727, 82 USPQ2d 1385 (Supreme Court 2007) (KSR). Since the use of both the 802.11 protocol abstraction layer and the Hiperlan 2 IEEE 1394 service specific convergence sublayer for the conversation of IEEE 1394 packets to a format suitable for encapsulation by a wireless data link layer was well known in the art at the time of the invention, a person of ordinary skill in the art at the time of the invention would have recognized the Hiperlan 2 IEEE 1394 service specific convergence sublayer could be substituted for the 802.11 protocol adaptation layer to produce the predictable result of an IEEE 802.11 wireless system that uses the Hiperlan 2 IEEE 1394 service specific convergence sublayer to adapt IEEE 1394 packets for transmission on an IEEE 802.11 wireless link. *Id,* 127 S.Ct. at 1737-39, 82 USPQ2d at 1395-97.

Regarding claim 2, *Jeon* discloses the initial data are formatted according to a protocol of a cabled bus (Fig. 11, "IEEE 1394"). (The system of *Jeon* discloses that the initial data packets are created by an IEEE 1394 bus [Fig. 11, "IEEE 1394"].)

Regarding claim 3, *Jeon* discloses a method wherein the cabled bus is an IEEE 1394 bus, the first protocol for data transmission over a wireless network is the 802.11 protocol abstraction layer and the second protocol for data transmission over a wireless network is a protocol from the 802.11 family (Pages 75-77, Particularly Figs. 10 and 11). (*Jeon* discloses the use of a protocol adaptation layer [PAL] to create IEEE 1394 SDUs for transmission over an 802.11 network from received IEEE 1394 traffic [Fig. 10, "Wireless 1394 PAL"]. *Jeon* further discloses that the IEEE 1394 SDUs are then encapsulated in an 802.11 MAC services data unit [MSDU] at the data link layer and transmitted over the wireless network [Fig. 11 – "802.11 MSDU" and "IEEE 1394 SDU"].)

Jeon fails to disclose the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer of the Hiperlan/2 protocol such that a method is formed wherein the first protocol for data transmission over a wireless network is HiperLAN/2. In the same field of endeavor, The ESTI IEEE 1394 SSCS discloses the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer of the Hiperlan/2 protocol such that a method is formed wherein the first protocol for data transmission over a wireless network is HiperLAN/2 (Pages 11-14). (The system of The ESTI IEEE 1394 SSCS discloses the use of the IEEE 1394 SSCS to convert IEEE 1394 packets to IEEE1394 SSCS PDUs for encapsulation by the Hiperlan/2 Data Link Layer and transmission on the wireless link [Pages 11-14 and 23-24, Particularly Page 11, Fig. 1]).

Therefore, since The ESTI IEEE 1394 SSCS suggests the use of the Hiperlan 2 service specific convergence sublayer for adapting IEEE 1394 traffic to a form that may be encapsulated in and transmitted by the Hiperlan 2 data link layer and *Jeon* suggests the use of a protocol adaptation layer/convergence layer for adapting IEEE 1394 traffic to a format that can be encapsulated by the 802.11 data link layer, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the service specific convergence layer of The ESTI IEEE 1394 SSCS in to the teachings of *Jeon* by replacing the 802.11 protocol adaptation layer with the IEEE 1394 SSCS, as taught by The ESTI IEEE 1394 SSCS, and encapsulating the IEEE 1394 SSCS packets using the appropriate data link layer, as taught by The ESTI IEEE 1394 SSCS and *Jeon*. The motive to combine is to allow the use of a common conversion layer for Hiperlan 2 and IEEE 802.11 to reduce system complexity, as would have been apparent to a person of ordinary skill in the art at the time of the invention, and as is also suggested by *Williams* (See *Williams*, Page 4). (The system of *Williams* suggests the use of a common convergence/adaptation layer for bridging all wireless protocols [Page 4 – "There are calls to create a common approach to bridging across any wireless medium - Hiperlan/2, MMAC"].)

In the alternative, the motive to combine could also be supplied by KSR Int'l Co. v. Teleflex Inc., as *Jeon* discloses the present invention except for the use of the Hiperlan 2 service specific convergence sublayer (as opposed to the 802.11 protocol adaptation layer of *Jeon*) for adapting IEEE 1394 packets. KSR Int'l Co. v. Teleflex Inc. 127 S.Ct. 1727, 82 USPQ2d 1385 (Supreme Court 2007) (KSR). Since the use of both the 802.11 protocol abstraction layer and the Hiperlan 2 IEEE 1394 service specific convergence sublayer for the conversation of IEEE 1394

packets to a format suitable for encapsulation by a wireless data link layer was well known in the art at the time of the invention, a person of ordinary skill in the art at the time of the invention would have recognized the Hiperlan 2 IEEE 1394 service specific convergence sublayer could be substituted for the 802.11 protocol adaptation layer to produce the predictable result of an IEEE 802.11 wireless system that uses the Hiperlan 2 IEEE 1394 service specific convergence sublayer to adapt IEEE 1394 packets for transmission on an IEEE 802.11 wireless link. *Id,* 127 S.Ct. at 1737-39, 82 USPQ2d at 1395-97.

Regarding claim 4, *Jeon* fails to disclose the packets used are generated by an IEEE 1394 SSCS module. In the same field of endeavor, The ESTI IEEE 1394 SSCS discloses the packets used are generated by an IEEE 1394 SSCS module (Pages 11-14). (The system of The ESTI IEEE 1394 SSCS discloses the use of the IEEE 1394 SSCS to convert IEEE 1394 packets to IEEE1394 SSCS PDUs for encapsulation by the Hiperlan/2 Data Link Layer and transmission on the wireless link [Pages 11-14 and 23-24, Particularly Page 11, Fig. 1]).

Therefore, since The ESTI IEEE 1394 SSCS suggests the use of the Hiperlan 2 service specific convergence sublayer for adapting IEEE 1394 traffic to a form that may be encapsulated in and transmitted by the Hiperlan 2 data link layer and *Jeon* suggests the use of a protocol adaptation layer/convergence layer for adapting IEEE 1394 traffic to a format that can be encapsulated by the 802.11 data link layer, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the service specific convergence layer of The ESTI IEEE 1394 SSCS in to the teachings of *Jeon* by replacing the 802.11 protocol adaptation layer with the IEEE 1394 SSCS, as taught by The ESTI IEEE 1394 SSCS, and encapsulating the IEEE 1394 SSCS packets using the appropriate data link layer, as taught by

The ESTI IEEE 1394 SSCS and *Jeon*. The motive to combine is to allow the use of a common conversion layer for Hiperlan 2 and IEEE 802.11 to reduce system complexity, as would have been apparent to a person of ordinary skill in the art at the time of the invention, and as is also suggested by *Williams* (See *Williams*, Page 4). (The system of *Williams* suggests the use of a common convergence/adaptation layer for bridging all wireless protocols [Page 4 – "There are calls to create a common approach to bridging across any wireless medium - Hiperlan/2, MMAC"].)

In the alternative, the motive to combine could also be supplied by KSR Int'l Co. v. Teleflex Inc., as *Jeon* discloses the present invention except for the use of the Hiperlan 2 service specific convergence sublayer (as opposed to the 802.11 protocol adaptation layer of *Jeon*) for adapting IEEE 1394 packets. KSR Int'l Co. v. Teleflex Inc. 127 S.Ct. 1727, 82 USPQ2d 1385 (Supreme Court 2007) (KSR). Since the use of both the 802.11 protocol abstraction layer and the Hiperlan 2 IEEE 1394 service specific convergence sublayer for the conversation of IEEE 1394 packets to a format suitable for encapsulation by a wireless data link layer was well known in the art at the time of the invention, a person of ordinary skill in the art at the time of the invention would have recognized the Hiperlan 2 IEEE 1394 service specific convergence sublayer could be substituted for the 802.11 protocol adaptation layer to produce the predictable result of an IEEE 802.11 wireless system that uses the Hiperlan 2 IEEE 1394 service specific convergence sublayer to adapt IEEE 1394 packets for transmission on an IEEE 802.11 wireless link. *Id,* 127 S.Ct. at 1737-39, 82 USPQ2d at 1395-97.

Regarding claim 5, *Jeon* fails to disclose a method wherein the frames, generated on the basis of the packets according to an intermediate format defined by the said layer or layers of the

first protocol for data transmission over a wireless network, the said frames being in accordance with the second protocol for data transmission over a wireless network, are distinguished from the other frames by a specific identifier in the frame. In the same field of endeavor, The ESTI IEEE 1394 SSCS discloses a method wherein the frames, generated on the basis of the packets according to an intermediate format defined by the said layer or layers of the first protocol for data transmission over a wireless network, the said frames being in accordance with the second protocol for data transmission over a wireless network, are distinguished from the other frames by a specific identifier in the frame (Pages 11-14). (The system of The ESTI IEEE 1394 SSCS discloses the use of the IEEE 1394 SSCS to convert IEEE 1394 packets to IEEE1394 SSCS PDUs for encapsulation by the Hiperlan/2 Data Link Layer and transmission on the wireless link [Pages 11-14 and 23-24, Particularly Page 11, Fig. 1]. The ESTI IEEE 1394 SSCS further discloses the establishment of a separate multicast MAC ID that is used exclusively for distributing IEEE 1394 streams to members of a distribution group [Pages 39-43, Particularly Figs. 13-15].)

Therefore, since The ESTI IEEE 1394 SSCS suggests the use of MAC multicasts for distributing information concerning a particular IEEE 1394 stream to multiple devices, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the multicasting of The ESTI IEEE 1394 SSCS in to the teachings of *Jeon* by assigning multicast addresses to use for the distribution of IEEE 1394 frames, as taught by The ESTI IEEE 1394 SSCS. The motive to combine is to increase efficiency by allowing a station to transmit to multiple endpoints simultaneously.

Regarding claim 7, *Jeon* discloses a data transmission apparatus, containing means making it possible to receive frames according to the protocol and formatted according to a cabled bus, means of connection to a wireless network, a module for processing the frames formatted according to a cabled bus so as to insert the data received on the cabled bus into a frame according to a format defined by a first protocol for data transmission over a wireless network, wherein the apparatus contains means for generating transmission frames in accordance with a protocol abstraction layer of the first protocol for data transmission over a wireless network on the basis of the said packets in which are inserted data received from the cabled bus, the said packets being formatted according to at least certain layers of the first protocol (Pages 75-77, Particularly Figs. 10 and 11). (*Jeon* discloses the use of a protocol adaptation layer [PAL] to create IEEE 1394 SDUs for transmission over an 802.11 network from received IEEE 1394 traffic [Fig. 10, "Wireless 1394 PAL"]. *Jeon* further discloses that the IEEE 1394 SDUs are then encapsulated in an 802.11 MAC services data unit [MSDU] at the data link layer and transmitted over the wireless network [Fig. 11 – "802.11 MSDU" and "IEEE 1394 SDU"].)

Jeon fails to disclose the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer of the Hiperlan/2 protocol so as to form a data transmission apparatus, containing means making it possible to receive frames according to the protocol and formatted according to a cabled bus, means of connection to a wireless network, a module for processing the frames formatted according to a cabled bus so as to insert the data received on the cabled bus into a frame according to a format defined by a first protocol for data transmission over a wireless network, wherein the apparatus contains means for generating transmission frames in accordance with a second protocol for data transmission over a wireless network on the

basis of the said packets in which are inserted data received from the cabled bus, the said packets being formatted according to at least certain layers of the first protocol. In the same field of endeavor, The ESTI IEEE 1394 SSCS discloses the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer of the Hiperlan/2 protocol so as to form a data transmission apparatus, containing means making it possible to receive frames according to the protocol and formatted according to a cabled bus, means of connection to a wireless network, a module for processing the frames formatted according to a cabled bus so as to insert the data received on the cabled bus into a frame according to a format defined by a first protocol for data transmission over a wireless network, wherein the apparatus contains means for generating transmission frames in accordance with a second protocol for data transmission over a wireless network on the basis of the said packets in which are inserted data received from the cabled bus, the said packets being formatted according to at least certain layers of the first protocol (Pages 11-14). (The system of The ESTI IEEE 1394 SSCS discloses the use of the IEEE 1394 SSCS to convert IEEE 1394 packets to IEEE1394 SSCS PDUs for encapsulation by the Hiperlan/2 Data Link Layer and transmission on the wireless link [Pages 11-14 and 23-24, Particularly Page 11, Fig. 1]).

Therefore, since The ESTI IEEE 1394 SSCS suggests the use of the Hiperlan 2 service specific convergence sublayer for adapting IEEE 1394 traffic to a form that may be encapsulated in and transmitted by the Hiperlan 2 data link layer and *Jeon* suggests the use of a protocol adaptation layer/convergence layer for adapting IEEE 1394 traffic to a format that can be encapsulated by the 802.11 data link layer, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the service specific convergence layer of

The ESTI IEEE 1394 SSCS in to the teachings of *Jeon* by replacing the 802.11 protocol adaptation layer with the IEEE 1394 SSCS, as taught by The ESTI IEEE 1394 SSCS, and encapsulating the IEEE 1394 SSCS packets using the appropriate data link layer, as taught by The ESTI IEEE 1394 SSCS and *Jeon*. The motive to combine is to allow the use of a common conversion layer for Hiperlan 2 and IEEE 802.11 to reduce system complexity, as would have been apparent to a person of ordinary skill in the art at the time of the invention, and as is also suggested by *Williams* (See *Williams*, Page 4). (The system of *Williams* suggests the use of a common convergence/adaptation layer for bridging all wireless protocols [Page 4 – "There are calls to create a common approach to bridging across any wireless medium - Hiperlan/2, MMAC"].)

In the alternative, the motive to combine could also be supplied by KSR Int'l Co. v. Teleflex Inc., as *Jeon* discloses the present invention except for the use of the Hiperlan 2 service specific convergence sublayer (as opposed to the 802.11 protocol adaptation layer of *Jeon*) for adapting IEEE 1394 packets. KSR Int'l Co. v. Teleflex Inc. 127 S.Ct. 1727, 82 USPQ2d 1385 (Supreme Court 2007) (KSR). Since the use of both the 802.11 protocol abstraction layer and the Hiperlan 2 IEEE 1394 service specific convergence sublayer for the conversation of IEEE 1394 packets to a format suitable for encapsulation by a wireless data link layer was well known in the art at the time of the invention, a person of ordinary skill in the art at the time of the invention would have recognized the Hiperlan 2 IEEE 1394 service specific convergence sublayer could be substituted for the 802.11 protocol adaptation layer to produce the predictable result of an IEEE 802.11 wireless system that uses the Hiperlan 2 IEEE 1394 service specific convergence

sublayer to adapt IEEE 1394 packets for transmission on an IEEE 802.11 wireless link. *Id,* 127 S.Ct. at 1737-39, 82 USPQ2d at 1395-97.

Regarding claim 8, *Jeon* discloses an apparatus wherein the cabled bus is an IEEE 1394 bus, the first protocol for data transmission over a wireless network is the 802.11 protocol abstraction layer and the second protocol for data transmission over a wireless network is a protocol from the 802.11 family (Pages 75-77, Particularly Figs. 10 and 11). (*Jeon* discloses the use of a protocol adaptation layer [PAL] to create IEEE 1394 SDUs for transmission over an 802.11 network from received IEEE 1394 traffic [Fig. 10, "Wireless 1394 PAL"]. *Jeon* further discloses that the IEEE 1394 SDUs are then encapsulated in an 802.11 MAC services data unit [MSDU] at the data link layer and transmitted over the wireless network [Fig. 11 – "802.11 MSDU" and "IEEE 1394 SDU"].)

Jeon fails to disclose the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer of the Hiperlan/2 protocol such that an apparatus is formed wherein the first protocol for data transmission over a wireless network is HiperLAN/2. In the same field of endeavor, The ESTI IEEE 1394 SSCS discloses the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer of the Hiperlan/2 protocol such that an apparatus is formed wherein the first protocol for data transmission over a wireless network is HiperLAN/2 (Pages 11-14). (The system of The ESTI IEEE 1394 SSCS discloses the use of the IEEE 1394 SSCS to convert IEEE 1394 packets to IEEE1394 SSCS PDUs for encapsulation by the Hiperlan/2 Data Link Layer and transmission on the wireless link [Pages 11-14 and 23-24, Particularly Page 11, Fig. 1]).

Therefore, since The ESTI IEEE 1394 SSCS suggests the use of the Hiperlan 2 service specific convergence sublayer for adapting IEEE 1394 traffic to a form that may be encapsulated in and transmitted by the Hiperlan 2 data link layer and *Jeon* suggests the use of a protocol adaptation layer/convergence layer for adapting IEEE 1394 traffic to a format that can be encapsulated by the 802.11 data link layer, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the service specific convergence layer of The ESTI IEEE 1394 SSCS in to the teachings of *Jeon* by replacing the 802.11 protocol adaptation layer with the IEEE 1394 SSCS, as taught by The ESTI IEEE 1394 SSCS, and encapsulating the IEEE 1394 SSCS packets using the appropriate data link layer, as taught by The ESTI IEEE 1394 SSCS and *Jeon*. The motive to combine is to allow the use of a common conversion layer for Hiperlan 2 and IEEE 802.11 to reduce system complexity, as would have been apparent to a person of ordinary skill in the art at the time of the invention, and as is also suggested by *Williams* (See *Williams*, Page 4). (The system of *Williams* suggests the use of a common convergence/adaptation layer for bridging all wireless protocols [Page 4 – "There are calls to create a common approach to bridging across any wireless medium - Hiperlan/2, MMAC"].)

In the alternative, the motive to combine could also be supplied by KSR Int'l Co. v. Teleflex Inc., as *Jeon* discloses the present invention except for the use of the Hiperlan 2 service specific convergence sublayer (as opposed to the 802.11 protocol adaptation layer of *Jeon*) for adapting IEEE 1394 packets. KSR Int'l Co. v. Teleflex Inc. 127 S.Ct. 1727, 82 USPQ2d 1385 (Supreme Court 2007) (KSR). Since the use of both the 802.11 protocol abstraction layer and the Hiperlan 2 IEEE 1394 service specific convergence sublayer for the conversation of IEEE 1394

packets to a format suitable for encapsulation by a wireless data link layer was well known in the art at the time of the invention, a person of ordinary skill in the art at the time of the invention would have recognized the Hiperlan 2 IEEE 1394 service specific convergence sublayer could be substituted for the 802.11 protocol adaptation layer to produce the predictable result of an IEEE 802.11 wireless system that uses the Hiperlan 2 IEEE 1394 service specific convergence sublayer to adapt IEEE 1394 packets for transmission on an IEEE 802.11 wireless link. *Id,* 127 S.Ct. at 1737-39, 82 USPQ2d at 1395-97.

Regarding claim 9, *Jeon* discloses an apparatus wherein the apparatus comprises, as far as the protocol adaptation layer of the first protocol is concerned, only the layers necessary for the encapsulation and the transmission of packets generated with the aid of the said layers of the first protocol (Pages 75-77, Particularly Figs. 10 and 11). (*Jeon* discloses the use of a protocol adaptation layer [PAL] to create IEEE 1394 SDUs for transmission over an 802.11 network from received IEEE 1394 traffic [Fig. 10, "Wireless 1394 PAL"]. *Jeon* further discloses that the IEEE 1394 SDUs are then encapsulated in an 802.11 MAC services data unit [MSDU] at the data link layer and transmitted over the wireless network [Fig. 11 – "802.11 MSDU" and "IEEE 1394 SDU"].)

Jeon fails to disclose the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer of the Hiperlan/2 protocol such that an apparatus is formed, wherein the apparatus comprises, as far as the second protocol is concerned, only the layers necessary for the encapsulation and the transmission of packets generated with the aid of the said layers of the first protocol. In the same field of endeavor, The ESTI IEEE 1394 SSCS discloses the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer

of the Hiperlan/2 protocol such that an apparatus is formed, wherein the apparatus comprises, as far as the second protocol is concerned, only the layers necessary for the encapsulation and the transmission of packets generated with the aid of the said layers of the first protocol (Pages 11-14). (The system of The ESTI IEEE 1394 SSCS discloses the use of the IEEE 1394 SSCS to convert IEEE 1394 packets to IEEE1394 SSCS PDUs for encapsulation by the Hiperlan/2 Data Link Layer and transmission on the wireless link [Pages 11-14 and 23-24, Particularly Page 11, Fig. 1]).

Therefore, since The ESTI IEEE 1394 SSCS suggests the use of the Hiperlan 2 service specific convergence sublayer for adapting IEEE 1394 traffic to a form that may be encapsulated in and transmitted by the Hiperlan 2 data link layer and *Jeon* suggests the use of a protocol adaptation layer/convergence layer for adapting IEEE 1394 traffic to a format that can be encapsulated by the 802.11 data link layer, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the service specific convergence layer of The ESTI IEEE 1394 SSCS in to the teachings of *Jeon* by replacing the 802.11 protocol adaptation layer with the IEEE 1394 SSCS, as taught by The ESTI IEEE 1394 SSCS, and encapsulating the IEEE 1394 SSCS packets using the appropriate data link layer, as taught by The ESTI IEEE 1394 SSCS and *Jeon*. The motive to combine is to allow the use of a common conversion layer for Hiperlan 2 and IEEE 802.11 to reduce system complexity, as would have been apparent to a person of ordinary skill in the art at the time of the invention, and as is also suggested by *Williams* (See *Williams*, Page 4). (The system of *Williams* suggests the use of a common convergence/adaptation layer for bridging all wireless protocols [Page 4 – "There are

calls to create a common approach to bridging across any wireless medium - Hiperlan/2, MMAC"].)

In the alternative, the motive to combine could also be supplied by KSR Int'l Co. v. Teleflex Inc., as *Jeon* discloses the present invention except for the use of the Hiperlan 2 service specific convergence sublayer (as opposed to the 802.11 protocol adaptation layer of *Jeon*) for adapting IEEE 1394 packets. KSR Int'l Co. v. Teleflex Inc. 127 S.Ct. 1727, 82 USPQ2d 1385 (Supreme Court 2007) (KSR). Since the use of both the 802.11 protocol abstraction layer and the Hiperlan 2 IEEE 1394 service specific convergence sublayer for the conversation of IEEE 1394 packets to a format suitable for encapsulation by a wireless data link layer was well known in the art at the time of the invention, a person of ordinary skill in the art at the time of the invention would have recognized the Hiperlan 2 IEEE 1394 service specific convergence sublayer could be substituted for the 802.11 protocol adaptation layer to produce the predictable result of an IEEE 802.11 wireless system that uses the Hiperlan 2 IEEE 1394 service specific convergence sublayer to adapt IEEE 1394 packets for transmission on an IEEE 802.11 wireless link. *Id,* 127 S.Ct. at 1737-39, 82 USPQ2d at 1395-97.

6. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over *Jeon*, et al. (Jeon, Ho-In, 1394 Wireless Home Network, Korean Institute of Communication and Science, Journal of Information and Communication, Vol. 19, No. 5, Pages 63-78), The ESTI IEEE 1394 SSCS (Author Unknown, Broadband Radio Access networks; HIPERLAN Type 2; Part 3: IEEE Service Specific Convergence Sublayer (SSCS), European Telecommunications Standards Institute (ESTI) Technical Specification (TS) 101 493-3, Version 1.2.2, Pages 1-74, December

2001) and *Williams*, et al. (Steven Williams and Benno Ritter, 1394 Requirements of 802.11 QoS, IEEE 802.11 Working Group Submission, March 2001, Pages 1-17) as applied to claim 1, and further in view of *Kulk*, et al. (US Patent No. 7,415,535 B1).

Regarding claim 6, *Jeon* as modified fails to disclose a method wherein the frames, generated on the basis of the packets according to an intermediate format defined by the said layer or layers of the first protocol for data transmission over a wireless network and in accordance with the second protocol for data transmission over a wireless network, are distinguished from the other frames through the use of specific MAC addresses identifying their origin and their destination. In the same field of endeavor, *Kuik* discloses a method wherein the frames, generated on the basis of the packets according to an intermediate format defined by the said layer or layers of the first protocol for data transmission over a wireless network and in accordance with the second protocol for data transmission over a wireless network, are distinguished from the other frames through the use of specific MAC addresses identifying their origin and their destination (Fig. 3, Column 2, Lines 26-50 and Column 3, Lines 15-37). (The system of *Kuik* discloses the use of direct mapping to map the IP address of devices on a layer 2 network segment that is incompatible with another MAC based layer 2 segment into a "Virtual MAC" address that is used by the converting gateway to represent the device on the incompatible segment on the MAC based segment [Fig. 3, Column 2, Lines 26-50 and Column 3, Lines 15-37].)

Therefore, since *Jeon* suggests the direct mapping of devices on an incompatible segment, it would have been obvious to person of ordinary skill in the art at the time of the

invention to implement the direct mapping of *Kuik* into the teachings of *Jeon* by mapping devices on the IEEE 1394 segment onto the Wireless LAN segment by mapping the IEEE 1394 Addresses onto the Wireless LAN by copying the IEEE 1394 device addresses into the gateway device MAC address to create a "Virtual MAC" address to represent the device on the Wireless LAN segment, such that when two IEEE 1394 devices communicated via their respective gateways, each is represented by its unique virtual MAC address. The motive to combine is to allow the IEEE 1394 devices to be directly addressed on the network.

In the alternative, the motive to combine could also be supplied by KSR Int'l Co. v. Teleflex Inc., as *Jeon* discloses the present invention except for the use of direct mapping to represent devices in an incompatible network segment. KSR Int'l Co. v. Teleflex Inc. 127 S.Ct. 1727, 82 USPQ2d 1385 (Supreme Court 2007) (KSR). Since the use of direct mapping to represent remote IP devices in an incompatible network segment was known in the art at the time of the invention, a person of ordinary skill in the art at the time of the invention would have recognized that the direct mapping technique could likewise be used to make IEEE 1394 devices addressable in an Ethernet segment by adding the IEEE 1394 address to the bridge MAC address to create a unique identifier for the device on the IEEE 1394 network segment on the Wireless LAN to produce the predictable result of an IEEE 802.11 wireless bridge for IEEE 1394 that uses a directly mapped MAC address to represent devices on the Wireless LAN Segment. *Id,* 127 S.Ct. at 1737-39, 82 USPQ2d at 1395-97.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Crutchfield whose telephone number is (571) 270-3989. The examiner can normally be reached on Monday through Friday 8:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Ryman can be reached on (571) 272-3152. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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